

Application No.: 09/910,425

Case No.: 55579US004

REMARKS

Claims 1, 3-9, and 11-18 will be pending upon entry of the present amendment. Claims 19 and 20 have been canceled in addition to previously canceled claims 2 and 10. Claims 1 and 17 have been amended. Claim 1 has been amended to recite that the wear indicator is a "mechanical wear indicator". Claim 17 has been amended to recite that "a mechanical indication" is used to indicate post consumption. Support for the amendment can be found, for example, on page 37 lines 5-6. Reconsideration of the application as amended is respectfully requested in view of the following comments.

As a preliminary matter, Applicants have amended the Brief Description of the Drawings and the reference to figure 13 as requested in the Office Action. It is alleged in the Office Action that FIGS. 4 and 9 are required to be labeled as "Prior Art". The Office Action, however, failed to state a reason for this conclusion. It is submitted that the figures at issue do not only illustrate that which is prior art. In FIG. 4, for example, a colored layer 622 is applied over pyramidal abrasive composites. In FIG. 9, for example, a photodetector 49 that monitors the color of the fixed abrasive article 39 is shown.

I. Claims 1, 3, 6-9, 11-12, and 15 are Novel in view of Robinson

Claims 1, 3, 6-9, 11-12, and 15 stand rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Robinson et al. (U.S. 5,733,176). Applicant respectfully traverses this rejection because Robinson does not teach or suggest the use of a mechanical wear indicator as recited in Applicant's amended claims.

Robinson reports a polishing pad with voids that can be used to contain chemicals. Chemicals stored within the voids are released by the breaching of the voids during a polishing operation (Abstract). The chemical released is selected to halt the chemical polishing, change the color of the pad, or to change the torque load on the rotating fixed abrasive pad (Abstract). Robinson does not teach or suggest the use of a mechanical wear indicator as recited in Applicant's amended claims. Accordingly, the rejection of claims 1, 3, 6-9, 11-12, and 15 under 35 U.S.C. § 102(b) as allegedly being anticipated by Robinson should be withdrawn.

Application No.: 09/910,425

Case No.: 55579US004

II. Claims 1, 3-9, and 11-16 are Not Obvious in view of "Applicant's Admitted Prior Art" and Robinson

Claims 1, 3-9, and 11-16 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over "Applicant's Admitted Prior Art" in view of Robinson. Applicant respectfully traverses this rejection because, as discussed above, Robinson does not teach or suggest the use of a mechanical wear indicator as recited in Applicant's amended claims. Accordingly, the rejection of claims 1, 3-9, and 11-16 under 35 U.S.C. § 103(a) as being allegedly unpatentable over "Applicant's Admitted Prior Art" in view of Robinson should be withdrawn for at least this reason.

III. Claims 1, 3-9, and 11-18 are Not Obvious in view of "Applicant's Admitted Prior Art" and Cheek

Claims 1, 3-9, and 11-18 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over "Applicant's Admitted Prior Art" in view of Cheek (U.S. 5,913,713). Applicant respectfully traverses this rejection because it relies on unspecified references and provides no evidence of record indicating that those of ordinary skill would have been properly motivated to combine the unspecified references with Cheek, much less to combine them in a manner that would have produced Applicants' claimed invention.

Cheeks reports a polishing pad that includes a wear indicator. The polishing pad is used with a polishing slurry (see, e.g., column 4, lines 12-16). The wear indicator is formed by forming grooves on the backside of the bulk polishing pad material. As the pad wears thinner during use, a visual indication appears as a result of a high contrast material placed in the grooves (see, e.g., column 6, line 11 through column 8, line 13).

In contrast, claim 1 recites a fixed abrasive article comprising a textured three-dimensional abrasive composite comprising abrasive composite elements in combination with a mechanical wear indicator. Cheeks fails to teach or suggest the use of any wear indication means with a fixed abrasive, much less a mechanical wear indicator. Further, it is unclear from the teachings of Cheek how one skilled in the art, aware of the surface topography of a fixed abrasive having a textured three-dimensional abrasive composite comprising abrasive composite elements, would combine the teachings of Cheek with a fixed abrasive article of the present

Application No.: 09/910,425

Case No.: 55579US004

invention. As discussed in U.S. Pat. No. 6,612,916 (Kollodge, et al.), for example, a textured three-dimensional abrasive composite comprising abrasive composite elements has a textured surface with flow channels between the composite elements. The textured surface remains textured and the flow channels remain present throughout the useful life of the fixed abrasive. It is unclear from the teachings of Cheek how the grooves on the backside of a planar polishing pad as reported by Cheek could be used to monitor the height of the composites of the textured surface of the present invention. Accordingly, those of ordinary skill would not have been properly motivated to combine the unspecified references with Cheek, much less to combine them in a manner that would have produced Applicants' claimed invention.

Similarly, independent claim 17 recites a fixed abrasive article comprising posts in combination with a mechanical indication to indicate post consumption. It is unclear from the teachings of Cheek how the grooves reported by Cheek could be used to monitor the thickness of the posts of the claimed invention.

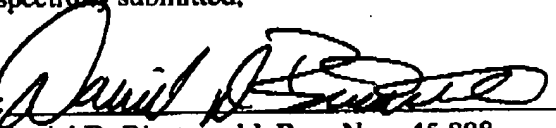
For at least these reasons the remaining claims that depend from independent claims 1 and 17 are patentable over "Applicant's Admitted Prior Art" in view of Cheeks. Accordingly, the rejection of claims 1, 3-9, and 11-18 under 35 U.S.C. § 103(a) as being allegedly unpatentable over "Applicant's Admitted Prior Art" in view of Cheek should be withdrawn.

IV. Conclusion

In view of the above, it is submitted that the application is in condition for allowance. Reconsideration of the application is requested. The Examiner is invited to contact Applicant's undersigned representative with any questions concerning Applicant's application.

Respectfully submitted,

May 6, 2005
Date

By: 
Daniel D. Biesterveld, Reg. No.: 45,898
Telephone No.: (651) 737-3193

Office of Intellectual Property Counsel
3M Innovative Properties Company
Facsimile No.: 651-736-3833